

## REMARKS

In the patent application, claims 2-32 are pending. In the office action, all pending claims are again rejected under 35 U.S.C. 103(a) as being unpatentable over *Dischert et al.* (U.S. Patent No. 5,802,226 A, hereafter referred to as *Dischert*), in view of *Christopolous et al.* (U.S. Patent No. 6,526,099 B1, hereafter referred to as *Christopolous*). Claim 12 is objected to.

At section 9, claim 12 is objected to because the claim dependency of claim 12 is not specified.

Applicant has amended claim 12 to be dependent from claim 2. Applicant has also amended claim 8 to be dependent from claim 2.

No new matter has been introduced.

At section 11, claims 2-10 and 13-31 are rejected 35 U.S.C. 103(a) as being unpatentable over *Dischert*, in view of *Christopolous*.

### A. Claim 2

In the claimed invention, claim 2 claims a method of editing a bitstream carrying video data indicative of a video sequence, wherein the video data comprises residual data in the video sequence. The method comprises:

obtaining the residual data from the bitstream; and

scaling the residual data for providing further data in a modified bitstream in order to achieve a video effect, wherein said modifying is carried out in a transform domain.

### B. The Cited *Dischert* Reference

It is respectfully submitted that *Dischert* discloses two different embodiments.

#### (I) First Embodiment

The first embodiment is concerned with mixing the current video signal with a delayed video signal in order to achieve a video fade effect (col.1, line 66-col.2, line 5; col.2, line 66-col.4, line 34; Figures 3A-3E). The mixer 320 is also shown in Figures 9a and 10a. In Figure 3a, the modules 94 and 96 are multipliers for adjusting the amplitude of the input video signal based on a coefficient K (col.6, lines 48-56). Thus the first embodiment is only concerned with mixing video signals in the time domain or spatial domain, and not in a transform domain or compressed domain as claimed in claims 2 and 4, for example.

## (II) Second Embodiment

The second embodiment is concerned with producing a mixed audio/video signal during trick play modes (such as fast forward). The second embodiment is shown in Figures 4, 5 and 6. As shown in Figure 4, *Dischert* uses a shuffler 406 to rearrange a portion of the audio signal from the audio analog/digital interface 402 so as to provide accurate image reproduction during the trick play mode (col.4, lines 36-45) and to distribute errors caused by defects in the tape over a larger audio surface. *Dischert* also uses a separate shuffler 408 to rearrange a portion of the video signal from the analog/digital interface 404 so as to provide for accurate reproduction of the video signal during the trick play mode and to distribute errors caused by defects in the tape over a larger video surface (col.4, lines 46-52). Before mixing the rearranged audio signal and the rearranged video signal, a coder 410 is used to transform the rearranged video signal into a transform video signal (Figure 4; Figure 6; col.4, lines 52-54; col.5, lines 47-60). As shown in Figures 4 and 6, *Dischert* uses a coder 410 to mix signals from the shuffler 408 after transforming the signals with a DCT module 60 (see Figures 6) into a second domain such as the spatial frequency domain. The second domain can be a spatial frequency domain (col.5, lines 47-52).

## C. Rejection of Claim 2

In rejecting claim 2, the Examiner states that

- a) *Dischert* discloses obtaining data from a video stream (Figure 4, video input into analog/digital interface 402 and 404; Figure 5, video input into digital VCR head 418 and 528);
- b) *Dischert* discloses scaling video data (Figure 10, a mixer with first multiplier 104 that multiplies a first video stream by coefficient K and a second multiplier 102 that multiplies a second video stream by coefficient J);
- c) *Dischert* discloses modification of transform domain video (Figure 8, video data processed through DCT before being input into mixer 80);
- d) *Dischert* discloses a video editor that operates on frequency domain (abstract).

The Examiner admits that *Dischert* fails to disclose residual video data or error video data, but points to *Christopolous* for disclosing error video data.

#### (I) Spatial Frequency Domain

Regarding item (d), the Examiner states that *Dischert* discloses a video editor that operates on a spatial frequency domain. As pointed out in sub-section B(I) above, the video editor of the first embodiment operates on time domain or spatial domain, and not on transform domain. Thus, the video mixer, according to the first embodiment of *Dischert*, is irrelevant to the present invention. As pointed out in sub-section B(II) above, the video editor of the second embodiment operates on a spatial frequency domain. It is arguable whether spatial frequency domain is the same as the transform domain as claimed. Even if the spatial frequency domain is considered as the same as the transform domain, the video editor the Examiner relies upon is the second embodiment of *Dischert*.

Thus, the following argument is only based on the mixing of video signals during the trick play modes, according to the second embodiment of *Dischert*.

#### (II) Video Data

Regarding item (a), the Examiner states that *Dischert* discloses obtaining data from a video stream (Figure 4, video input into analog/digital interface 402 and 404; Figure 5, video input into digital VCR head 418 and 528). Figures 4 and 5 illustrate the recording components and the playback components of the second embodiment.

### (III) Scaling Video Data

Regarding item (b), the Examiner states that *Dischert* discloses scaling video data (Figure 10, a mixer with first multiplier 104 that multiplies a first video stream by coefficient K and a second multiplier 102 that multiplies a second video stream by coefficient J).

It is respectfully submitted that Figure 10a illustrates the mixing circuit for use in the embodiments shown in Figures 3 and 8 (co.2, lines 56-57). As shown in Figure 8, the inputs to the mixer 80 are the DCT transform of data from block 408 and decoded data from block 512. Block 408 is the shuffler in Figure 4. Shuffler 408 is used to rearrange portions of the digital video signal (from analog/digital interface 404) in order to provide for accurate production during trick play modes (such as fast forward) and to distribute errors caused by defects in the tape over a larger video surface (col.4, lines 46-52). Block 512 is an EEC decoder as depicted in Figure 5. Figure 5 illustrates playback components in a digital video tape recorder.

### (IV) Residual Data

The Examiner admits that *Dischert* fails to disclose obtaining and processing residual data, but point to *Christopolous* for disclosing residual data.

It is known that residual data, as disclosed in *Christopolous*, is a value within a frame of video data related to a value in a neighboring frame. In particular, error data is used for motion compensated prediction in reconstructing frame based on the previous frame. If error data are rearranged in a shuffler 408, it may not be possible to reconstruct the video signal in a frame based on the previous frame. Thus, in order to incorporate the residual data or error data as disclosed in *Christopolous*, the shufflers and the de-shufflers must be taken out in any video recording and playback device. If the shufflers and the de-shufflers are taken out from the video recorder and playback device of *Dischert*, the trick play modes may no longer functional.

### D. Dischert, in View of Christopolous, Fails to Render Claim 2 Obvious

If proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion of modification to

make the proposed modification. *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984). See MPEP 2143.01 V. In the instant case, the use of residual data, according to *Christopolous*, instead of regular digital video data, would render the video device as disclosed in *Dischert* unsatisfactory regarding its trick play modes.

Likewise, if the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims prima facie obvious. *In re Ratti*, 270 F.2d 810, 123 USPQ 349 (CCPA 1959). See MPEP 2142.01 VI. In the instant case, the removal of the shufflers in order to accommodate the residual data according to *Christopolous*, would render the video device as disclosed in *Dischert* less accurate or even non-functional.

Furthermore, the test for prima facie obviousness is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981). In the instant case, a skilled person who has the knowledge of the trick-play modes, according to *Dischert*, is not likely to search for a document that discloses a transcoder specifically designed for implementing a simultaneous change in rate and in resolution, as disclosed in *Christopolous*. The principle of this particular transcoder itself is not useful in a trick-play mode video recorder and playback device, because *Dischert* has nothing to do with the change in rate and in resolution. Furthermore, the fact that the transcoder operates on error data is not useful in the video device of *Dischert* because the introduction of error data will drastically change the operational principle of *Dischert*. More importantly, the cited *Christopolous* reference itself has no suggestion as to how a video effect can be carried out. Thus, a skilled person who is knowledgeable about the transcoder, as disclosed in *Christopolous*, is unlikely to think of modifying the transcoder into a video effect producing apparatus.

For the above reasons, *Dischert*, in view of *Christopolous*, fails to render claim 2 obvious.

E. *Dischert*, in View of *Christopolous*, Fails to Render Claims 4, 13, 18 and 27 Obvious

Each of claims 4, 13, 18 and 27 has limitations similar to claim 2. For reasons regarding claim 2 above, *Dischert*, in view of *Christopolous*, fails to render claims 4, 13, 18 and 27 obvious.

F. Dependent Claims 3, 5-10, 14-17, 19-26 and 28-31

Claims 3, 5-10, 14-17, 19-26 and 28-31 are dependent from claims 2, 4, 13, 18 and 27 and recite features not recited in claims 2, 4, 13, 18 and 27. For reasons regarding claims 2, 4, 13, 18 and 27 above, *Dischert*, in view of *Christopolous*, also fails to render claims 3, 5-10, 14-17, 19-26 and 28-31 obvious.

G. Dependent Claims 11, 12 and 32

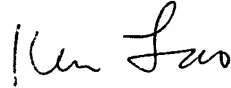
At section 12, claims 11, 12 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Dischert*, in view of *Christopolous* and further in view of *Oguro* (U.S. Patent No. 5,477,276). The Examiner cites *Oguro* for disclosing advance fade-in effects.

It is respectfully submitted that claims 11, 12 and 32 are dependent from claims 2 and 27 and recite features not recited in claims 1 and 27. For reasons regarding claims 1 and 27 above, they are also distinguishable over the cited *Dischert*, *Christopolous* and *Oguro* references.

CONCLUSION

Claims 2-32 are allowable. Early allowance of all pending claims is earnestly solicited.

Respectfully submitted,



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